

**LLNL JULY 1994 FIELD TEST RESULTS**

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We have developed a tunable mid-IR laser based on OPO technology and used this system to run a simultaneous two-line DIAL measurement of gases released during the October 1994 tests at the Remote Sensing Test Range at the Nevada Test Site. We built and fielded a Portable Laser Laboratory that is easily adaptable to future experiments. The results of the October field tests are presented. The equipment layout in the Portable Laser Laboratory is shown and the performance of the subsystems is discussed. The two-line DIAL system was tunable across several absorption features for the two gases released. Measurements taken on an isolated absorption band, on the shoulder of an interfering line, and on a weak absorption line are presented and discussed. The measured concentrations are compared to the actual released values showing excellent agreement between the measured result and the released amount.

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